

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) An inductor comprising:

a nonconductive, ~~tubular form~~ tube having an outer surface and defining a tube axis, said outer surface formed with a groove extending substantially helically about said tube axis, and wherein said tube is formed with a cylindrical inner surface, with said inner surface being distanced from said tube axis by a radial distance, R; and

a coiled wire formed with a plurality of turns for passing an electrical current therethrough, said wire being wound around said form with at least a portion of said wire disposed in said groove to maintain a predetermined separation between adjacent turns during a generation of magnetic forces created by electrical currents passing through said wire wherein said wire extends from a first end to a second end and said inductor further comprises a first clamp mounted on said form for clamping said first end at a first clamping point distanced from said tube axis by a radial distance, r, with $r > R$, and a second clamp mounted on said form for clamping said second end.

2. (Original) An inductor as recited in claim 1 wherein said form is made of an epoxy – glass composite.

3. (Original) An inductor as recited in claim 1 wherein said groove has a substantially rectangular shaped cross-section.

4. (Original) An inductor as recited in claim 1 further comprising a means for cooling said wire.

Claims 5-7 (Cancelled)

8. (Currently Amended) An inductor as recited in claim ~~[[7]]~~ 1 further comprising a saddle made of a non-magnetic material for mounting said first clamp to said form.

9. (Original) An inductor as recited in claim 8 wherein said saddle is made of a stainless steel.

10. (Original) An inductor as recited in claim 8 further comprising an insulating member affixed to said saddle for attaching said saddle to a mounting plate.

11. (Currently Amended) An inductor comprising:

a coiled wire formed with a plurality of turns for passing an electrical current therethrough, wherein said wire extends from a first end to a second end;
[[and]]

a [[form]] tube having a wall formed with a groove extending partway through said wall, with said wire being disposed in said groove to at least partially expose said wire to a volume surrounding said form to cool said wire, said groove being dimensioned for holding said wire to maintain a predetermined separation between adjacent turns during a generation of magnetic forces created by electrical currents passing through said wire wherein said tube is formed with a cylindrical inner surface defining a tube axis, and said inner surface is distanced from said tube axis by a radial distance, R ;[[.]]

a first clamp mounted on said form for clamping said first end at a first clamping point distanced from said tube axis by a radial distance, r , with $r > R$;
and

a second clamp mounted on said form for clamping said second end.

12. (Currently Amended) An inductor as recited in claim 11 wherein said ~~form~~ is substantially tubular shaped and tube is made of a nonconductive material.

13. (Original) An inductor as recited in claim 12 wherein said groove has a substantially rectangular shaped cross-section.

Claims 14-16 (Cancelled)

17. (Currently Amended) An inductor as recited in claim ~~[[16]]~~ 11 further comprising a saddle made of a non-magnetic material for mounting said first clamp to said form.

18. (Withdrawn) A method for manufacturing an inductor, said method comprising the steps of:

providing a nonconductive, tubular form having an outer surface and defining a tube axis;

forming a groove in said outer surface, said groove extending substantially helically about said tube axis; and

winding a wire around said form with at least a portion of said wire disposed in said groove to maintain said wire in a predetermined shape during a generation of magnetic forces created by electrical currents passing through said wire.

19. (Withdrawn) A method as recited in claim 18 further comprising the steps of:

providing a shroud for establishing a volume;
positioning at least a portion of said wire in said volume; and
circulating a fluid in said volume to cool said wire.

20. (Withdrawn) A method as recited in claim 19 further comprising the step of clamping an end of said wire to said form.